

U.S. Patent Application Serial No. 10/797,764  
Reply to Office Action of 4/16/07

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**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

1. (Currently Amended) An array hybridization apparatus for holding a slide, comprising:
  - (a) a thermoplastic substrate comprising a front side opposite said slide for acting as a backing for said array hybridization apparatus, wherein the thermoplastic substrate comprises a back side having a least one support ridge;
  - (b) [[a]] at least one gasket interposed between said slide and said front side of the substrate, and
  - (c) [[a]] at least one spacer interposed between said slide and said front side of the substrate wherein the height of the at least one spacer is less than the height of the at least one gasket, and adjacent to said gasket wherein [[an]] at least one array hybridization chamber is defined between said slide, said thermoplastic substrate, said at least one gasket and said at least one spacer when said slide and said substrate contact said at least one gasket and said at least one spacer, and wherein said thermoplastic substrate is held flat.
2. (Currently Amended) An array hybridization apparatus as recited in claim 1, wherein said at least one gasket comprises a substantially deformable material.
3. (Currently Amended) An array hybridization apparatus as recited in claim 1, wherein said at least one spacer comprises a substantially non-deformable material.
4. (Currently Amended) An array hybridization apparatus as recited in claim 1, wherein said at least one gasket is attached to said slide.
5. (Currently Amended) An array hybridization apparatus as recited in claim 1, wherein said at least one gasket is attached to said thermoplastic substrate.

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6. (Currently Amended) An array hybridization apparatus as recited in claim 1, wherein said at least one gasket comprises a portion of said thermoplastic substrate.

7. (Currently Amended) An array hybridization apparatus as recited in claim 1, wherein said at least one gasket is attached to both said slide and said thermoplastic substrate.

8. (Currently Amended) An array hybridization apparatus as recited in claim 1, wherein said at least one spacer is attached to said slide.

9. (Currently Amended) An array hybridization apparatus as recited in claim 1, wherein said at least one spacer is attached to said substrate.

10. (Currently Amended) An array hybridization apparatus as recited in claim 1, wherein said thermoplastic substrate further comprises ~~a back side having at least one~~ a plurality of support ridge ridges extending along the length of the thermoplastic backing.

11. (Currently Amended) An array hybridization apparatus as recited in claim 1, wherein said thermoplastic backside of said thermoplastic substrate comprises ~~at least one~~ a plurality of support ridge ridges extending across the width of the thermoplastic backing.

12. (Currently Amended) An array hybridization apparatus as recited in claim 1, wherein said at least one spacer is attached to both said slide and said thermoplastic substrate.

13. (Currently Amended) An array hybridization apparatus as recited in claim 1, wherein said at least one spacer comprises a material selected from the group consisting of polyurethanes, plastics, acrylics, metals and non-deformable or less deformable polymers.

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14. (Currently Amended) An array hybridization apparatus as recited in claim 1, wherein said at least one spacer is between 25 to 500 microns in height.

15. (Original) An array hybridization apparatus as recited in claim 11, wherein said array hybridization chamber is between 25 to 1000 microns in height.

16. (Withdrawn) A method of making an array hybridization apparatus having an array hybridization chamber comprising:

- a. providing a slide, a thermoplastic substrate, gasket and spacer; and
- b. contacting said slide, thermoplastic substrate, gasket and spacer to define a uniform array hybridization chamber wherein said thermoplastic substrate is held flat.

17. (Withdrawn) A method of making an array hybridization apparatus with an array hybridization chamber of uniform volume, comprising:

- a. providing a slide opposite a thermoplastic substrate;
- b. interposing a gasket and spacer between said slide and said thermoplastic substrate;
- c. contacting said slide, said thermoplastic substrate, said gasket and said spacer to define a chamber there between wherein said thermoplastic substrate is held flat.

18. (New) An array hybridization apparatus as recited in claim 1 further comprising a holder, wherein the holder has notches situated to hold said slide and said thermoplastic substrate in registered alignment when said at least one array hybridization chamber is defined.

19. (New) The array hybridization apparatus of claim 18 wherein said holder holds said thermoplastic substrate substantially flat when said at least one array hybridization chamber is defined.

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20. (New) The array hybridization apparatus of claim 1 further comprising a cover, wherein the cover is situated to enable pressure to be applied to said slide for the purpose of defining said at least one array hybridization chamber.
21. (New) The array hybridization apparatus of claim 18 further comprising a cover, wherein the cover is situated to enable pressure to be applied to said slide for the purpose of defining said at least one array hybridization chamber.
22. (New) The array hybridization apparatus of claim 6 wherein the at least one gasket is integral to said substrate.
23. (New) The array hybridization apparatus of claim 22 wherein the substrate is injection molded.
24. (New) The array hybridization apparatus of claim 10 wherein the plurality of support ridges are molded.
25. (New) The array hybridization apparatus of claim 11 wherein the plurality of support ridges are molded.